

## Futures Enhance Wet Barrel Trading in Specialized Markets

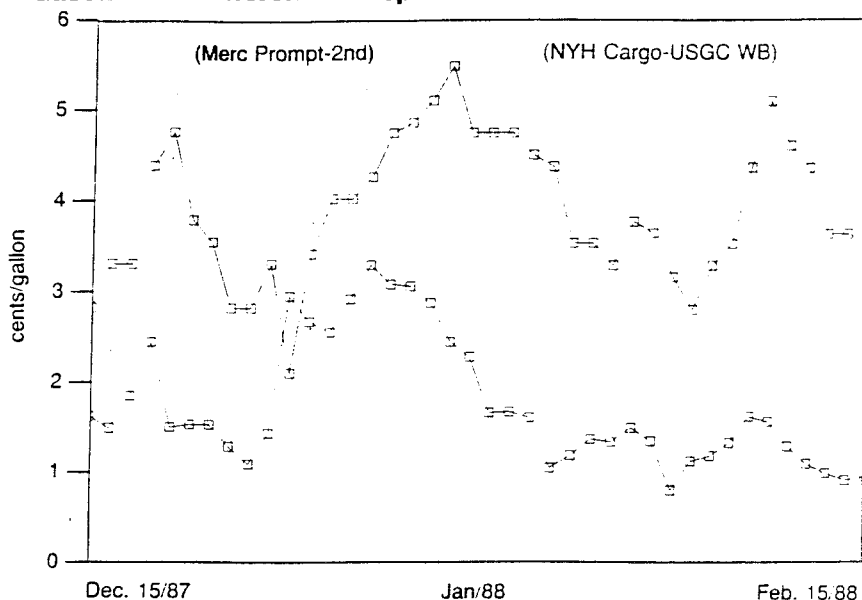
CYNTHIA KASE  
Area Manager  
Chevron International Oil Company, Inc.

Chevron blends and stores heating oil in their Freeport Bahamas Terminal for ultimate sale into the Caribbean market. As is the case with many specialized markets, however, the volumes which can be placed in this region are limited. One cannot choose to sell oil on a given day: a seller must wait for one of the handful of buyers in the area to come into the market and be prepared to meet their immediate requirements. This also holds true for sales into any somewhat illiquid wet barrel market. In the past, a seller's only choice in a balanced market would have been to discount the oil below alternate Caribbean supply, store it subject to price risk, or sell it into a lower tier more liquid market. For example, the U.S. East Coast (USEC) absorbs more oil than the Caribbean but discounts high (versus low) pour gasoil, due to its inferior flow characteristics in cold weather.

Oil sold into any market is valued by buyers based on alternative supply pricing. European oil, previously destined for the USEC or Canada, which ultimately ends up in the Caribbean, will be priced on a New York Harbor (NYH) alternative: while barrels originating in the U.S. Gulf Coast (USGC) or South America will most likely be related to the USGC price. Both these markets are re-



Gasoil Price Differentials: Spot Prices and Futures Prices



lated to the value of NYMEX heating oil and gasoline futures contracts, therefore, one can estimate the prices achievable in the Caribbean relative to the NYMEX. In the case of any NYMEX related market it is then possible with the use of futures to establish a price and hedge a profit margin. Then product can be held in inventory until buyers surface for the wet barrels. When the oil is sold, preferably versus an EFP (Exchange of Futures for Physicals), the value the seller has added to the oil (by improving quality by blending, meeting specific dates, selling atypical cargo sizes etc.) is realized.

### Optimizing Basis

Additional profit can be made by optimizing the basis. Although supply in the Caribbean region is usually priced relative to the USGC or the NYH, the differential between these markets can vary widely. The average is roughly 2.5 cents per gallon, but swings from 0 to 5 cents per gallon are not uncommon. When the spread is wide, the price in the region is lower relative to the NYH cash price (and therefore, the futures market) than when the differential is small. Thus, the basis differential to the futures price is always most attractive to the seller when the USGC/NYH differential is small. This optimal differential, however, is not always coincident with the overall market level at which one wishes to sell. For example, if the seller thinks that the USGC/NYH differential will increase and the overall level of the market will fall, it is more prudent to sell futures rather than a cash cargo in order to lock in the overall market level without set-

ting the cash basis. When the differential improves, i.e., narrows, the physical oil can be sold in the cash market and the seller thus obtains a more favorable basis than would have been possible when the futures were sold.

The USGC/NYH differential has the opposite impact on the buyer purchasing USGC oil as blendstock. Similar, yet inverse, hedging techniques can be used when buying oil out of the USGC for ultimate sale into NYH NYMEX related markets.

Gasoil or gasoline sold into USEC-related markets is priced, for the most part, in terms of premiums and discounts to futures prices. In a market perceived as being in a trading range, differentials to the NYMEX contracts tend to become more favorable to sellers as the bottom of the range is approached. As prices fall, more buyers are interested in obtaining supply; therefore, demand for oil increases. Thus in order to maximize profits, sellers should short futures at the perceived top of the range but sell wet barrels, versus an EFP, at a good differential at the bottom.

A similar strategy can be used when the basis changes inversely to market direction. For example, if the value of wet barrels is expected to increase versus the NYMEX in a falling market. Traders can sell futures contracts to hedge a sales level and then, when the basis increases, sell the physical cargo versus an EFP and derive a better differential than would have been possible in the higher market.

It should be noted that while an EFP is the preferred method of concluding a deal it is

not always possible to find a trading partner. In this instance the physical transaction would have to be concluded at a fixed price and the futures position would have to be liquidated through an offsetting trade. While negotiating a deal and executing the futures transaction, prices may deviate from that upon which the fixed price is calculated. These deviations introduce the possibility of increased risk which may reduce the profitability of the deal.

### Hedging Basis

Sometimes in illiquid markets one cannot find a trading partner at the right time. One may have oil hedged and wish to sell it to take advantage of a favorable basis such as a prompt premium differential or the NYH/USGC differential, but it may not be possible to find a buyer. Thus, one may wish to hedge the differential.

Often, fluctuations in the NYH/USGC cash differential result from variations in supply and demand in the USEC. This (im)balance also is reflected frequently in the near month to outer month futures spreads. The USGC may gain value because of demand increases on the West Coast or even in the Far East. Clean products sold out of the Gulf Coast are usually priced basis the following month futures contract, so USGC cash prices for prompt month oil demand may be reflected in the second month contract value. Large moves in the relationship between the NYH and USGC, which are often short-lived, are sometimes reflected in the near to second month differentials. Thus if the differential is very low, expected to increase, and one is unable to find a buyer, it is possible to buy the near month, sell the outer and hedge against the spread widening.

Here is an example of how the opposite strategy works for a buyer of oil in the USGC. The basis is most favorable when the differential between the USGC and NYH is high. As one takes time looking for a ship and negotiating a purchase, the differential may erode; thus, one can lock in a favorable differential by selling the near month and buying the outer month. These strategies apply, of course, not only to blendstocks bought for Caribbean sales but to any gasoil related trades between USGC and USEC markets.

The cost to move a cargo of Northern quality oil from the USGC to the Northeast is about 4.5 to 5 cents per gallon. Thus, if the differential rises above this value, it is profitable to ship oil from the USGC to USEC. Early in January, both the NYH/USGC cash differential and the near versus outer month futures spread began to rise rapidly. In actuality the USGC/NYH differential rose to over 5.6 cents. During this time, the absolute level of the market fell. A strategy which

thus took advantage of (1) a high NYH cash premium, (2) large discounts in the USGC, and (3) the fall in the market would have been quite profitable.

#### January 6

Cash Basis:	+ 110
Feb.-March:	2.62
Cash:	Sell Boston heating oil cargo for 1HFeb delivery at February NYMEX +110, vs. EFP.
Futures:	Through EFP, long 225 February contracts.
Object:	Lock in high prompt premium on wet bbls. without locking in absolute sales level.

#### January 8

Cash Basis:	+ 90
Feb. Close:	53.73
Feb.-March:	3.39
Futures:	Sell Feb/March spread at 3.39, 225 contracts. Original 225 Feb. contracts liquidated. Long 225 March. Short additional 225 Feb. contracts at 53.73.
Object:	Protect USGC/NYH differential. Set absolute market level for sale, i.e. short falling market.

#### January 18

Cash Basis:	+ 70
Feb. Close:	50.71
Feb.-March:	1.70
Cash:	Buy 225 MB gasoil cargo ex USGC for Feb 1-5 lifting at March NYMEX less 3.00, vs. an EFP.
Futures:	Through EFP, liquidate 225 March contracts.
Object:	Obtain wet USGC cargo at high discount without locking in absolute purchase price in falling market.

#### January 29

Cash Basis:	+ 60
Feb. Close:	48.01
Feb.-March:	0.82
Futures:	Buy back 225 February shorts at 48.01.
Object:	Set absolute market level for purchase.



The profit made in this transaction is 8.06 cents per gallon, calculated as follows:

3.39	Intramarket Feb/March spread
1.10	Premium established for cash sale over Feb. NYMEX settlement price
3.00	Discount for USGC barrels vs. March NYMEX
5.72	Sale of 225 Feb. Contracts, Jan. 8 at 53.73 and buy back at 48.01 on Jan. 29
less	
5.00	Transportation USGC to USNE
0.15	Commission Fees

Total: 8.06 cents/gal.

If this transaction omitted futures, the profit would have been reduced by 4.64 cents to 3.42 cents per gallon (based on a sale at 54.58 cents per gallon and a purchase at 46.01 cents per gallon less 5 cents freight).

Thus executing this strategy with NYMEX contracts allowed optimization of bases on sales and purchase prices, the absolute levels at which the market was sold and bought and the USGC/NYH differential.

### Managing Market-Related Purchases

Many state oil companies in the Caribbean, Central and South American region price products on market related bases, that is, at differentials to prices published in *Platts*

*Oilgram Report* for either New York or the USGC. The price of a cargo, therefore, is not determined until the cargo has loaded, since most formulas are based on prices effective on and around the bill of lading date.

Without a hedging mechanism, the price of the cargo is undiscovered and subject to the vagaries of the market. Since the cash market, however, and thus published spot prices track the NYMEX futures prices, one can fix a price by buying futures at attractive market levels and liquidating the position by selling contracts at the time the cargo is priced. In order for this strategy to be effective, it is important to be able to sell the futures contracts at prices which closely track published spot prices, i.e., the differential between the futures contract execution price and the published spot price should be similar to the cash basis. Selling the contracts near the close is recommended in order to accurately mirror published prices. In order to minimize the number of contracts that must be liquidated on a given day, negotiating a formula which uses a 3- to 5-day average is preferred. One must, therefore, close only one-third to one-fifth of a total position on a given day, so if volume is particularly low one does not risk moving the market and any daily variation between the cash basis and futures is minimized through averaging.

Of course there are alternatives that might enhance the profitability further. The previously described strategy is called a blind hedge: once the futures are bought, the purchase level is established. As market sentiment changes the hedge could be lifted and replaced any number of times before the bill of lading date, held after the bill of lading date, or the cargo could be hedged using other than the prompt month contract.

Two other methods previously mentioned, can be used to achieve a more perfect hedge. First, if oil is purchased and priced on a USGC formula for ultimate sale into a NYH price related market, techniques described previously for hedging the USGC/NYH differential can be used to enhance the results of the transaction. Second, if oil is priced during a period when the cash basis is expected to fluctuate widely, the variance can also be hedged by spreading near to outer month futures. Similar but opposite techniques apply when selling on the basis of published prices.

Despite illiquid cash markets, Chevron has been able to manage market price risk and profit from the opportunity to increase revenues through the use of the futures market. These strategies can be applied to gasoline and gasoil trading in any NYMEX related market.

## Refiner Crude Oil Postings Track NYMEX WTI Futures

Since the inception of the NYMEX crude oil futures contract in 1983, U.S. crude oil domestic postings and the NYMEX crude oil futures prices have tracked each other closely.

U.S. domestic crude postings are set by the refiner/purchaser. The supply and operations departments of each respective company analyze the economics of refining margins and monitor competitive crude oil pricing at the lease, in order to set the crude oil posting. Typically, buyers and sellers prefer domestic crude arrangements to be on a term versus spot basis. Contractual arrangements tend to be negotiated on refiner postings on a 30-day evergreen basis.

Since the arrival of futures markets, increased price transparency is more evident in the market. Traditional refiner dominance of postings has become less evident. Producers have more flexibility to increase profit by selling futures to hedge production. NYMEX is also a source of alternate supply for midcontinent refiners. Previously, refiner postings would tend to lag a rising market, and in a declining market, postings

would decline more swiftly. However, current competitive markets influence price more rapidly. Major refiners with significant need for feedstock, such as Sun Refining and Marketing, Citgo Petroleum Co., Conoco Inc. and Koch Industries, monitor market developments closely and adjust prices accordingly. Other companies involved in gathering/reselling crude oil barrels, such as Permian Corp., also tend to be highly price responsive.

Frequently the Exchange has been asked to what degree do postings and futures track one another. Analysis was conducted on two companies' crude oil postings which are among the most market sensitive. NYMEX *Energy in the News* editor Louise Burke examined Citgo and Sun postings for West Texas Intermediate (WTI) versus NYMEX West Texas Intermediate (WTI) first nearby futures.\*

The first analysis was conducted on postings issued by Citgo Petroleum Co. Citgo is a petroleum refining, marketing and transportation company, jointly owned by The Southland Corporation and Petroleos de

